

Claims

- [c1] A network administration apparatus for administrating a network device that performs communication in a network, comprising:
a VLAN information database operable to store one or more VLAN groups to which one or more network devices connected to said network are to belong, and one or more units of device identifying information respectively specifying said one or more network devices, each of said one or more VLAN groups corresponding to at least one unit of device identifying information;
a receiving unit operable to receive device identifying information of a network device therefrom;
a database updating unit operable to store said received device identifying information to correspond to a VLAN group to which said network device having said received device identifying information is to belong in said VLAN information database; and
a setting unit operable to assign said VLAN group stored in said VLAN information database that corresponds to said received device identifying information to said network device having said received device identifying information.
- [c2] A network administration apparatus as claimed in claim 1, wherein said device identifying information is a MAC address of said network device.
- [c3] A network administration apparatus as claimed in claim 1, wherein said VLAN information database further stores user identifying information, specifying a user of said network device, to correspond to said VLAN group of said network device,
said receiving unit further receives said user identifying information from said network device, and
said database updating unit stores said device identifying information in said VLAN information database to correspond to said user identifying information and said VLAN group, in a case where said VLAN information database has already stored said user identifying information received by said receiving unit.
- [c4] A network administration apparatus as claimed in claim 1, wherein said receiving unit receives said device identifying information of said network device, which belongs to a default VLAN group in said VLAN information database, from said network device, and said setting unit assigns, in a case where said device identifying information received by

said receiving unit is included in said one or more units of device identifying information stored in said VLAN information database, said VLAN group corresponding to said received device identifying information to said network device of said default VLAN group.

- [c5] A network administration apparatus as claimed in claim 4, wherein said VLAN information database further stores one or more units of user identifying information respectively specifying users of said one or more network devices in such a manner that each unit of user identifying information corresponds to one of said one or more VLAN groups, said receiving unit further receives, in a case where said received device identifying information is not stored in said VLAN information database, user identifying information from said network device of said default VLAN group, said database updating unit stores said device identifying information of said network device received by said receiving unit to correspond to said user identifying information and said VLAN group thereof in a case where said user identifying information received by said receiving unit is stored in said VLAN information database, and said setting unit assigns said VLAN group in said VLAN information database, that corresponds to said received device identifying information, to said network device of said default VLAN group.
- [c6] A network administration apparatus as claimed in claim 1, further comprising a detecting unit operable to detect a new network device that has been newly connected to said network or turned on, and said receiving unit receives device identifying information of said new network device detected by said detecting unit from said new network device.
- [c7] A network administration apparatus as claimed in claim 6, wherein said detecting unit further detects one of said one or more network devices that has been removed from said network or turned off, said detected network device having corresponding device identifying information stored in said VLAN information database, and said database updating unit deletes said corresponding device identifying information from said VLAN information database for said detected network device.
- [c8] A network administration apparatus as claimed in claim 7, wherein said database updating unit deletes said corresponding device identifying information of said network

device detected by said detecting unit from said VLAN information database when a predetermined time period has passed after detection that said network device has been removed from said network or turned off.

- [c9] A network administration apparatus as claimed in claim 7, wherein said setting unit assigns a default VLAN group to a connection port of an interconnecting device corresponding to said network device detected by said detecting unit.
- [c10] A network administration apparatus as claimed in claim 9, wherein said network administration apparatus belongs to said default VLAN group, and said receiving unit receives device identifying information of a network device of said default VLAN group therefrom by being connected to said connection port to which said default VLAN group is assigned.
- [c11] A network administrating program for administrating a network device that performs communication in a network, comprising:
a storing module operable to store one or more VLAN groups to which one or more network devices connected to said network are to belong, and one or more units of device identifying information respectively specifying said one or more network devices, each of said one or more VLAN groups corresponding to at least one unit of device identifying information;
a receiving module operable to receive device identifying information of a network device therefrom;
a database-updating module operable to store said received device identifying information to correspond to a VLAN group to which said network device having said received device identifying information is to belong; and
a setting module operable to assign said VLAN group that corresponds to said received device identifying information, to said network device having said received device identifying information.
- [c12] A network administrating program as claimed in claim 11, wherein said storing module further stores user identifying information, specifying a user of said network device, to correspond to said VLAN group of said network device,
said receiving module further receives said user identifying information from said network device, and

said database-updating module stores said device identifying information to correspond to said user identifying information and said VLAN group, in a case where said storing module has already stored said user identifying information received by said receiving module.

- [c13] A network administrating program as claimed in claim 11, wherein said receiving module receives said device identifying information of said network device, which belongs to a default VLAN group different from said one or more VLAN groups in said VLAN information database, from said network device, and
said setting module assigns, in a case where said device identifying information received by said receiving module is included in said one or more units of device identifying information stored by said storing module, one of said one or more VLAN groups that corresponds to said received device identifying information to said network device of said default VLAN group.
- [c14] A network administrating program as claimed in claim 13, wherein said storing module further stores one or more units of user identifying information respectively specifying users of said one or more network devices in such a manner that each unit of user identifying information corresponds to one of said one or more VLAN groups,
said receiving module further receives, in a case where said received device identifying information is not stored by said storing module, said user identifying information of said network device of said default VLAN group,
said database-updating module stores said device identifying information of said network device received by said receiving module to correspond to said user identifying information and said VLAN group thereof in a case where said user identifying information received by said receiving module is stored by said storing module, and
said setting module assigns said VLAN group that corresponds to said received device identifying information to said network device of said default VLAN group.
- [c15] A network administrating program as claimed in claim 11, further comprising a detecting module operable to detect a new network device that has been newly connected to said network or turned on, and
said receiving module receives device identifying information of said new network device detected by said detecting module from said new network device.

- [c16] A network administrating program as claimed in claim 15, wherein said detecting module further detects one of said one or more network devices that has been removed from said network or turned off, said detected network device having corresponding device identifying information, and
said database-updating module deletes said corresponding device identifying information for said detected network device.
- [c17] A network administrating program as claimed in claim 16, wherein said database-updating module deletes said corresponding device identifying information of said network device detected by said detecting module, when a predetermined time period has passed after detection that said network device has been removed from said network or turned off.
- [c18] A network administrating program as claimed in claim 16, wherein said setting module assigns a default VLAN group to a connection port of an interconnecting device corresponding to said network device detected by said detecting module.
- [c19] A network administrating program as claimed in claim 18, wherein said receiving module receives device identifying information of a network device of said default VLAN group therefrom by being connected to said connection port to which said default VLAN group is assigned.
- [c20] A network administrating method for use in a network administration apparatus operable to administrate a network device that performs communication in a network, said network administration apparatus comprising a VLAN information database for storing one or more VLAN groups to which one or more network devices connected to said network are to belong, and one or more units of device identifying information respectively specifying said one or more network devices, each of said one or more VLAN groups corresponding to at least one unit of device identifying information, said method comprising:
receiving device identifying information of a network device therefrom;
storing received device identifying information to correspond to a VLAN group to which said network device having said received device identifying information is to belong; and
assigning said VLAN group that corresponds to said received device identifying information to said network device having said received device identifying information.

- [c21] A network administrating method as claimed in claim 20, further comprising storing user identifying information, specifying a user of said network device, to correspond to said VLAN group of said network device, and
storing said received device identifying information to correspond to said stored user identifying information and said VLAN group.
- [c22] A network administrating method as claimed in claim 20, further comprising receiving device identifying information of said network device, which belongs to a default VLAN group, and
in a case where said received device identifying information is included in said stored device identifying information, assigning one of said one or more VLAN groups that corresponds to said received device identifying information to said network device of said default VLAN group.
- [c23] A network administrating method as claimed in claim 22, further comprising storing one or more units of user identifying information respectively specifying users of said one or more network devices in such a manner that each unit of user identifying information corresponds to one of said one or more VLAN groups,
in a case where said received device identifying information is not included in said stored device identifying information, storing said device identifying information of said network device of said default VLAN group to correspond to said stored user identifying information and said VLAN group thereof, and
assigning said VLAN group that corresponds to said device identifying information of said network device of said default VLAN group to said network device.
- [c24] A network administrating method as claimed in claim 20, further comprising detecting a new network device that has been newly connected to said network or turned on, and receiving detected device identifying information of said new network device.
- [c25] A network administrating method as claimed in claim 24, further comprising detecting one of said one or more network devices that has been removed from said network or turned off, and
deleting corresponding device identifying information for said detected network device.
- [c26] A network administrating method as claimed in claim 25, wherein, said device identifying

information of said network device is deleted when a predetermined time period has passed after detection that said network device has been removed from said network or turned off.

[c27] A network administrating method as claimed in claim 25, further comprising assigning a default VLAN group to a connection port of an interconnecting device corresponding to said detected network device.

[c28] A network administrating method as claimed in claim 27, wherein, device identifying information of a network device of said default VLAN group is received therefrom by connecting to said connection port to which said default VLAN group is assigned.

[c29] A computer network system comprising a network device operable to perform communication in a network, and a network administration apparatus operable to administrate said network device, wherein said network administration apparatus comprises:

- a VLAN information database operable to store one or more VLAN groups to which one or more network devices connected to said network are to belong, and one or more units of device identifying information respectively specifying said one or more network devices, each of said one or more VLAN groups corresponding to at least one unit of device identifying information;
- a receiving unit operable to receive, from said network device, device identifying information thereof;
- a database updating unit operable to store said received device identifying information to correspond to a VLAN group to which said network device having said received device identifying information is to belong; and
- a setting unit operable to assign said VLAN group that corresponds to said received device identifying information to said network device having said received device identifying information.

[c30] A computer network system as claimed in claim 29, wherein said VLAN information database further stores user identifying information, specifying a user of said network device, to correspond to said VLAN group of said network device, said receiving unit further receives said user identifying information from said network device, and

said database updating unit stores said device identifying information in said VLAN information database to correspond to said user identifying information and said VLAN group in a case where said VLAN information database has already stored said user identifying information received by said receiving unit.

- [c31] A computer network system as claimed in claim 29, wherein said receiving unit receives said device identifying information of said network device, which belongs to a default VLAN group, from said network device, and
said setting unit assigns, in a case where said device identifying information received by said receiving unit is included in said one or more units of device identifying information stored in said VLAN information database, one of said one or more VLAN groups that corresponds to said received device identifying information to said network device of said default VLAN group.
- [c32] A computer network system as claimed in claim 31, wherein said VLAN information database further stores one or more units of user identifying information respectively specifying users of said one or more network devices in such a manner that each unit of user identifying information corresponds to one of said one or more VLAN groups, said receiving unit further receives, in a case where said received device identifying information is not stored in said VLAN information database, said user identifying information of said network device of said default VLAN group,
said database updating unit stores said device identifying information of said network device received by said receiving unit to correspond to said user identifying information and said VLAN group thereof in a case where said user identifying information received by said receiving unit is stored in said VLAN information database, and
said setting unit assigns said VLAN group that corresponds to said device identifying information of said network device of said default VLAN group, to said network device.
- [c33] A computer network system as claimed in claim 29, wherein said network administration apparatus further comprises a detecting unit operable to detect a new network device that has been newly connected to said network or turned on, and
said receiving unit receives device identifying information of said new network device detected by said detecting unit from said new network device.
- [c34] A computer network system as claimed in claim 33, wherein said detecting unit further

detects one of said one or more network devices that has been removed from said network or turned off, said detected network device having corresponding device identifying information stored in said VLAN information database, and said database updating unit deletes said corresponding device identifying information from said VLAN information database for said detected network device.

- [c35] A computer network system as claimed in claim 34, wherein said database updating unit deletes said corresponding device identifying information of said network device detected by said detecting unit from said VLAN information database when a predetermined time period has passed after detection that said network device has been removed from said network or turned off.
- [c36] A computer network system as claimed in claim 34, further comprising an interconnecting device operable to connect said network administration apparatus and said network device,
wherein said setting unit assigns a default VLAN group, to a connection port of said interconnecting device corresponding to said network device detected by said detecting unit.
- [c37] A computer network system as claimed in claim 36, wherein said network administration apparatus belongs to said default VLAN group, and
said receiving unit receives device identifying information of a network device of said default VLAN group therefrom by being connected to said connection port to which said default VLAN group is assigned.